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The Impact of Mindfulness Practices on Classroom Climate and Perceived Teacher Stress

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THE IMPACT OF MINDFULNESS PRACTICES ON CLASSROOM CLIMATE AND PERCEIVED TEACHER STRESS

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ABSTRACT

BACKGROUND: Teaching has been identified as the most stressful profession in the human service industry (Greenberg, Brown, & Abenavoli, 2016). Elevated teacher stress can affect teacher well-being and burnout, as well as, classroom climate and student outcomes. OBJECTIVE: The purpose of this research study was to assess whether mindfulness practices can increase positive classroom climate and decrease perceived stress in early childhood teachers. METHOD: Participating teachers were selected based on results of the *Perceived Stress Scale* (*PSS*; Cohen, Kamarck, & Mermelstein, 1983). Data were collected on the positive and negative climate objectives from the Classroom Assessment Scoring System (CLASS; Pianta, La Paro, & Hamre, 2008), which were operationally defined. It was hypothesized that the use of mindfulness practices would result in increased observable behaviors associated with positive climate and decreased teacher perceived stress. Data were collected from video recordings of each of the participating teachers using partial interval recording to measure positive and negative climate behaviors. The Mindfulness Practices Intervention included yoga poses, intentional breathing, and guided meditation (Harris, Jennings, Katz, Abenavoli, & Greenberg, 2015), which were implemented within the school day during arrival, mid-morning, lunch, mid-afternoon, and after work in the evening. RESULTS: All three participants exhibited increased positive climate and decreased negative climate at intervention. Perceived Stress Scale scores decreased for two participants and increased for one participant. CONCLUSION: Mindfulness practices positively impact classroom climate, however it is not clear whether they impact teacher perceived stress.

CHAPTER 1. INTRODUCTION

Justification

Teacher stress is a critical issue in the educational field today. Forty six percent of teachers reported high levels of daily stress in a recent survey, ranking the teaching profession in the lead for most stressful occupation (Greenberg, Brown, & Abenavoli, 2016). The effects of teacher stress are well documented in the literature. High stress levels impact teacher well being and classroom climate (Flook, Goldberg, Pinger, Bonus, & Davidson, 2013). A wide body of research literature has documented the benefits of mindfulness practices, which include stress reduction, slower reactivity to potentially stressful events, better awareness, clarity of mind, and relaxation (Flook, et al., 2013; Frank, Reibel, Broderick, Cantrell, and Metz, 2013; Beshai, McAlpine, Weare, and Kuyken, 2016). Teacher social emotional competence has been correlated to positive classroom climate and student academic outcomes (Flook, et al.; Jennings, Frank, Snowberg, Coccia, & Greenberg, 2013). Mindfulness-based intervention for teachers shows promise for increasing positive classroom climate and decreasing teacher stress. However, many mindfulness-based interventions are not time or cost effective. Therefore the Mindfulness Practices Intervention was created as a more manageable program that can be easily integrated into the daily routines of teachers with and without children.

Mindfulness Practices Intervention

Mindfulness is defined by Kabat-Zinn, the founder of the Mindfulness Based Stress Reduction program, as "awareness that arises through paying attention, on purpose, in the present moment, non-judgmentally" (Booth, 2017, p. 1). Mindfulness can be cultivated by focusing attention on the breath, body, and mind from moment to moment. Mindfulness can be

attained through mindfulness practices. Mindfulness practices include yoga poses, intentional breathing, and guided meditation (Harris, Jennings, Katz, Abenavoli, & Greenberg, 2015). Mindfulness practices decrease stress and bring awareness to the body and mind (Hwang, Bartlett, Greben, & Hand, 2017).

Purpose

The purpose of this study was to measure the effect of mindfulness practices on positive and negative classroom climate and early childhood teacher perceived stress. *The Perceived Stress Scale* (PSS; Cohen, Kamarck, & Mermelstein, 1983) was used to identify teachers who experience high levels of perceived stress. These teachers were targeted for intervention. The Mindfulness Practices Intervention consisted of various mindfulness practices incorporated throughout the school day. During baseline and intervention, the teachers were observed and assessed on positive and negative climate indicators on the Classroom Assessment Scoring System (CLASS; Pianta, La Paro, & Hamre, 2008). Following the Mindfulness Practices Intervention, the PSS was re-administered to determine the impact of mindfulness practices on teacher perceived stress.

Research Questions

Two research questions guide the present study:

1. Do mindfulness practices impact classroom climate?

2. Can implementing mindfulness practices decrease early childhood teacher perceived stress?

Research Design

This study utilized single subject research design to measure the effects of mindfulness practices on positive and negative classroom climate from the Classroom Assessment Scoring

System (CLASS; Pianta, La Paro, & Hamre, 2008). Specifically, a multiple baseline design across subjects was used to measure the effects of mindfulness practices on teacher behavior in the classroom (Kazdin, 2011). Data were collected in accordance with standards set forth from the *Single Case Technical Document* (Kratochwill, Hitchcock, Horner, Levin, Odom, Rindskopf, & Shadish, 2010) and included a minimum of five data points per phase. Levels of teacher perceived stress was assessed by the PSS, which was administered before baseline and after the Mindfulness Practices Intervention was completed.

Benefits

Stress is detrimental not only to teachers, but also to the children in their care. Teachers who are able to cope with stress are more equipped to provide care consistent with indicators on the Classroom Assessment Scoring System (Flook, et al., 2013; CLASS; Pianta, La Paro, & Hamre, 2008) associated with positive classroom climate. Previous research has established that a positive classroom climate results in better academic, social, and emotional outcomes for young children (Schonert-Reichl, 2017). Mindfulness practice is an effective coping strategy for stress. Mindfulness practices have been shown to decrease stress and reactivity to negative stimuli and increase sleep quality, compassion, clarity of mind, and relaxation (Davis & Hayes, 2011; Frank, et al., 2013; Hölzel, et al., 2011; Hwang, et al., 2017). Teachers who are less stressed also have better relationships and exhibit more positive interactions with students (Jennings, et al., 2013).

Limitations

Due to the nature of data collection, teachers were aware of the observer. This could have produced a *Hawthorne Effect*; meaning that teachers may have modified their behavior when they became aware that they were being observed and videotaped (Cook, 1962). The threat of

reactive assessment defined as, "The extent to which subjects are aware that their behavior is being assessed and that this awareness may influence how they respond" (Kazdin, 2011, p. 33) is also relevant. Teachers were followed around with a camera for observational purposes during the study. This could have caused added stress to the participants. These threats are a consideration when evaluating the observation data for this study.

Assumptions

1. Early childhood teachers have high-perceived stress levels (Greenberg, et al., 2016).
2. Teachers who are more mindful are better able to manage perceived stress (Taylor, Harrison, Haimovitz, Oberle, Thomson, Schonert-Reichl, and Roeser, 2015).
3. Perception of high stress levels result in high levels of negative classroom climate and low levels of positive classroom climate (Flook, et al., 2013).

Definitions

Mindfulness is defined by Kabat-Zinn, the founder of the Mindfulness Based Stress Reduction program, as "awareness that arises through paying attention, on purpose, in the present moment, non-judgmentally" (Booth, 2017).

Mindfulness practices included yoga poses, intentional breathing, and guided meditation (Harris, Jennings, Katz, Abenavoli, & Greenberg, 2015).

The *Perceived Stress Scale* (PSS) was a measure used in the study. "It measures the degree to which situations in one's life are appraised as stressful" (Cohen, Kamarck, & Mermelstein, 1983, p. 385).

Perceived Stress is the extent that a person believes their stress outweighs their ability to cope (Cohen, et al., 1983). Stress was measured using the *PSS* and did not include any physiological symptoms of stress.

CHAPTER 2. LITERATURE REVIEW

Preschool children spend the majority of their waking hours in early care environments. Having authoritative caregivers who are highly responsive, resilient, and able to cope with stress and model effective coping strategies is imperative for young children's social-emotional and academic development (Cohen, 2012; Schonert-Reichl, 2017). Due to various factors such as high job demands and lack of support and autonomy, teaching is now ranked as the most stressful occupation in the human service industry (Greenberg, et al., 2016). It seems reasonable to assume that when a teacher perceives stress, she has less emotional resources to be mindful of their interactions with young children (Flook, et al., 2013). Therefore, it is important to investigate the nature of perceived stress of early childhood educators and the importance of the classroom climate for child behavior. The literature, particularly in regards to teachers, has become focused on mindfulness and the effect it has on stress and classroom climate.

Classroom Climate

Positive classroom climate and teacher resiliency are correlated with positive student development and academic outcomes, as well as student social emotional learning (Cohen, 2012; Schonert-Reichl, 2017). Teacher's social and emotional well-being affects the classroom environment (Flook, et al., 2013). A negative environment results in student stress and misbehavior. Reducing teacher stress can help to promote a healthy environment and improve teacher well-being and teacher-student relationships (Flook, et al., 2013).

"Positive affect, self-compassion, depersonalization, teaching efficacy, and mindfulness were positively correlated with emotional climate" (Jennings, et al., 2013, p. 376). According to Jennings, et al., teacher stress is correlated with "higher levels of absenteeism, reduced quality performance, and frequent irritable mood" (p. 376). They assessed the effects of the *Cultivating*

Awareness and Resilience in Education (CARE for Teachers) program on teachers' well-being, efficacy, burnout/time pressure, and mindfulness. The population included in the study included 53 urban and suburban public school teachers from two different districts. Participants were administered a series of self-report questionnaires, as well as a program evaluation. The CARE program involves four sessions over the course of four to six weeks equaling a total of 30 hours. In the program, the teachers practice emotions skills, mindful awareness, caring and compassion. Findings suggest that practicing mindfulness result in greater competencies to regulate emotional reactivity through mindful awareness. Teacher general well-being, resiliency, efficacy, burnout/time pressure were all positively impacted by the intervention as well. Participants reported positive evaluations of the CARE program. "Improvements in teachers' well-being, efficacy, burnout, and mindfulness were associated with teachers' reports of improvements in student and classroom outcomes" including improved relationships with their students, classroom management, and classroom climate (Jennings, et al., p. 386).

Cohen (2013) defined resiliency as "a person's capacity to overcome stress or adversity" and explained that "resilience is not a trait that people either have or do not have. It involves behaviors, thoughts, and actions that can—at least to some extent—be learned and developed in anyone" (p. 411). Relevant research is summarized and it is concluded that, "positive and sustained school climate predicts and/or is associated with increased academic achievement, positive youth development, effective risk prevention, health promotion efforts, and teacher satisfaction and retention" (p. 414). This study emphasizes the need for resilient teachers as it impacts the classroom and school climate and is a trait that can be acquired as a person becomes more capable of overcoming stress.

According to Flook, et al., (2013), "reducing and managing teacher stress is part of a formula for promoting a healthy classroom environment" (p. 182). Flook, et al., evaluated a modified Mindfulness-Based Stress Reduction program explicitly for elementary school teachers to assess its effects on stress, burnout, and teacher efficacy. In the study, mindfulness was defined as "paying attention in the present moment, on purpose, and without judgment" (as cited by Flook, et al., p. 183). Participants included 18 elementary teachers from four public schools, 10 in the intervention group and eight in the control group. Self-report measures were administered at baseline and post-intervention, such as the Symptom Checklist 90-R, the Five-Facet Mindfulness Scale, and The Maslach Burnout Inventory-Educators Survey. Additionally, the CLASS was used to directly observe emotional support (including positive and negative climate), classroom organization, and instructional support. Cortisol levels were tested using saliva samples. A computerized test was also administered, including the Cambridge Neuropsychological Test Automated Battery, The Rapid Visual Information Processing Task, and the Affective Go/No-Go task. The data exhibited significant advancements in the intervention group such as a decrease in psychological symptoms, burnout, and attentional bias, as well as, an increase in mindfulness and self-compassion and improvement in observer-rated classroom behavior. Flook, et al., concluded, "…Tending to stress reduction translates into tangible benefits for teachers' sense of well-being and effectiveness in the classroom, which in turn are likely to have positive impact on students' own well-being and learning, for example, via the teacher-student relationship and classroom climate" (p. 190).

Schonert-Reichl (2017) notes that research has shown that teaching is ranked among the most stressful professions in the human service industry. High stress levels in teachers and their inability to cope negatively influences social-emotional learning for their students. A recent

Gallup Poll determined that 46% of teachers reported high daily stress ranking teaching highest in occupational stress (Schonert-Reichl). Not only are these high levels of teacher stress a detriment to physical and emotional well-being, but also lead to elevated rates of teacher burnout. Teacher's social and emotional competencies and the ability to cope with stress are valuable in that "warm classroom environments and positive teacher-student relationships promote both academic learning and social-emotional learning" (Schonert-Reichl, p. 142). In Oberle and Schonert-Reichl (2016), a research study of Canadian fourth and seventh graders, evidence of a correlation between high levels of self-reported burnout and high morning cortisol levels in students indicating high stress levels were found. It was concluded that, "stress is contagious." Schonert-Reichl argues that teachers' social and emotional well-being effects students and should be a part of teacher preparation and professional development.

A positive classroom environment is imperative for young minds to develop and learn. Social-emotional development and academic learning are both affected by the interactions with teachers (Schonert-Reichl, 2017). Teachers who are less stressed are more effective educators and have positive impacts classroom climate (Flook, et al., 2013). Positive affect, self-compassion, depersonalization, teaching efficacy, and mindfulness have been positively correlated with emotional climate (Jennings, et al., 2013). Therefore, it is important that teachers' social and emotional well-being is nurtured to increase positive learning environments for students.

Stress

Classroom teachers often perceive high levels of stress (Greenberg, et al., 2016). Occupational sources of stress include school organization, high job demands, and lack of support and autonomy (Greenberg, et al., 2016). Perceived stress can lead to negative classroom

environments and poor academic outcomes for students as well as negatively affect teacher well-being (Schonert-Reichl, 2017; Flook, et al., 2013). It is important to establish the consequences of perceived stress and viable measures of perceived stress.

Greenberg, et al. (2016) reviewed the sources and ramifications of teacher stress and addressed programs that could lessen teacher stress and improve teachers' social and emotional well-being and performance. A national survey conducted in 2014 found that "46% of teachers report high daily stress during the school year" (Greenberg, et al., p. 6). Negative outcomes of stress include excessive daytime sleepiness, atypical cortisol levels, negative classroom environments, and poor student academic outcomes. Four sources of stress were established as the main contributors to increased teacher stress including school organization, high job demands, and lack of support and autonomy at work. Teacher turnover is at an all time high as a result of increased levels of occupational stress. Teacher turnover negatively impacts student outcomes, disrupts relationships between schools and communities, and costs schools $7.3 billion each year (Greenberg, et al.). Programs that show evidence of effectiveness for decreasing teacher stress include teacher induction and mentoring programs, school-workplace wellness promotion programs, student behavior and social and emotional learning programs, and mindfulness and stress management-based professional development programs (Greenberg, et al.).

In order to address teacher stress, we first need to identify it. The *Perceived Stress Scale* (PSS; Cohen et al., 1983) "measures the degree to which situations in one's life are appraised as stressful" (p. 385). *Perceived stress* is also referred to as *psychological stress*, which is defined as the degree to which situations in one's life are appraised as stressful. The PSS consists of a 10-item questionnaire in which participants score each item on a scale from 0-4, *never* to *very*

often respectively. According to Cohen, "The PSS items were designed to tap the degree to which respondents found their lives unpredictable, uncontrollable, and overloading" which have been "repeatedly found to be central components of the experience of stress" (Cohen, p. 387). Every item begins, "In the last month, how often have you…" Scores are summarized to determine a perceived stress score. Particularly high stress scores range from 27 to 40. The PSS's reliability and validity were assessed using three samples. Two of the samples consisted of college students and one consisted of adults participating in a smoking-cessation program. The reliability for the PSS was .84, .85, and .86 for each of the samples (Cohen et al., 1983).

In summary, teacher stress is a detriment to teachers and children. Teacher stress negatively impacts both teacher well-being and has the potential to negatively impact children. Teacher stress can lead to burnout and high turnover over rates. Teachers exhibiting high-perceived stress levels need interventions to assist them with remediating stress. The present study administered the PSS to assess perceived stress and found that teachers fell within the range of high stress levels.

Mindfulness

One promising method to address classroom climate and stress is mindfulness (Hwang, et al., 2017). Mindfulness is purposeful awareness of and attention on the present moment without judgment (Flook, et al., 2013; Hölzel, et al, 2011). Mindfulness practices include yoga poses, intentional breathing, and guided meditation (Harris, et al., 2015). Research has shown evidence that mindfulness decreases stress, improves sleep quality, increases levels of self-compassion, body awareness, emotion regulation, decreased reactivity and increased response flexibility, and increased immune functioning (Frank, et al., 2013; Hölzel, et al., 2011; Hwang et al., 2017; Davis & Hayes, 2011). A lack of mindfulness may result in high stress levels, negative

reactivity to stressful stimuli, and lack of body awareness and clarity of mind. Teachers could improve their well-being, as well as the classroom environment through the use of mindfulness practices (Harris, et al., 2015; Flook, et al., 2013).

Many mindfulness intervention programs exist, such as the Mindfulness-Based Stress Reduction (MBSR) program. Frank, et al. (2013) evaluated the effectiveness an adapted MBSR program for decreasing educator stress and promoting well-being. Thirty-six high school teachers were included in the study in which they attended classes lead by a trained and experienced MBSR coach for eight weeks. The findings exhibited a significant improvement in sleep quality and self-reported levels of self-compassion. Teachers also reported gains in mindfulness capabilities. The data did not display a decline in anxiety or depression levels, but could be attributed to the limited time-frame in which the study was conducted. The results from this study suggest that the MBSR program has positive impacts on educator's physical and emotional well-being.

Another mindfulness intervention program consists of *Stress Management and Relaxation Training* (SMART; Cullen & Brito, 2014). Taylor, et al. (2015) conducted a mixed-method study on the effect of mindfulness-based interventions on teacher stress. The SMART program was evaluated to determine the intervention's ability to: (1) regulating emotion on the job; (2) improving coping with work-related stress; (3) increasing forgiveness among colleagues and students; and (4) increasing teachers' tendency to feel compassion for people generally, and for challenging students in particular (Taylor, et al., 2015). The program included mindfulness-based stress reduction, mindfulness-based emotion skills, and mindfulness-based compassion and forgiveness. The study compared a group who received the SMART intervention to a control group that did not. Results indicated a significant decline in stress reported by teachers

in the mindfulness-based intervention group. The negativity in which teachers described their conflicts and experiences at school was also significantly lower than those in the control group post intervention. Teachers in the intervention group used higher percentages of positive feeling words, positive emotion words, and affect-related words when discussing their most challenging student than those in the control group. Overall, it was concluded that "various aspects of (1) emotion regulation and (2) prosocial tendencies like compassion and forgiveness changed as a function of the mindfulness training and helped to reduce stress" (Taylor, et al., p. 12).

An evaluation of another mindfulness-based intervention program, the Community Approach to Learning Mindfully (CALM; Harris, Jennings, Katz, Abenavoli, & Greenberg, 2015) came to similar conclusions. This program encourages social-emotional competencies, stress management, and wellbeing for teachers. It is noted that "Most teachers now report being under great amounts of stress several days per week, and teacher ratings of job satisfaction recently reached a 25 year low among K-12 teachers in U.S. public schools" as of 2013 (as cited in Harris, et al., 2015, p. 143). The study used a waitlist control design. Two middle schools located in the same district, consisting of 64 teachers participated; one took part in the control group and the other received the CALM intervention spread across 16 weeks. The purpose of the study was to analyze the feasibility and efficacy of the CALM program for educators. The program included light yoga and mindful practices. The program consisted of brief morning sessions that took place at the school four days a week lead by a certified yoga instructor. Mindful practices included breathing, movement/posture, and relaxation/meditation (focused on relaxation, mindfulness, self-care, compassion, loving-kindness, and gratitude). Three methods were included in the research: online self-report, in-person physiological assessment, and self-administered saliva collection. Measures included *The Five Facet Mindfulness Questionnaire,*

The Distress Tolerance Scale, Teacher-Teacher Relational Trust, Teachers' Sense of Efficacy Scale, Perceived Stress Scale, Maslach Burnout Inventory—Educator's Survey, the Daily Physical Symptoms scale, the PROMIS Sleep-Related Impairment scale, Omron HEM-780 Automatic Blood Pressure Monitor with ComFit Cuff, and Cortisol tests by the Biomarker Core Lab at Pennsylvania State University. Evidence showed an increase in reported efficacy in classroom management, mindfulness and emotional functioning, improvement in subjective and physiological well-being, and reduced time urgency and burnout (Harris, et al.).

Reviews of previous mindfulness literature are helpful in summarizing the benefits of mindfulness and mindfulness programs. Through a comprehensive review of the literature, Holzel, et al., (2011) examined how mindfulness meditation affects attention regulation, body awareness, emotion regulation, and change in perspective of the self. Of the four benefits, improved emotion regulation is of the most importance, as this improvement has an impact on stress reduction. The review breaks down emotion regulation into two primary processes reappraisal and extinction, both of which can be attributed to more positive reactions to stressful or disturbing stimuli. Holzel, et al., also report neuroscience research that support the proposal that practicing mindfulness can increase positive emotions and in turn affect emotion regulation. Mindfulness effects on emotion regulation and positive emotions may impact classroom climate.

Another systematic review of the literature was presented by Hwang, et al., (2017) to evaluate mindfulness intervention research concerning implementation for in-service teachers. The review narrowed down their search to 16 mindfulness studies. Findings maintained that mindfulness has several mental health benefits for teachers including, coping with stress and emotions, managing conflict, better awareness of experiences, clarity of mind, relaxation, better reaction to challenges or stressful stimuli, and feelings of reduced stress. Not only were positive

mental health outcomes illustrated. Mindfulness also resulted in better classroom outcomes. For example, increased "classroom organization, emotion regulation, and use of positive affect words in the classroom" (Hwang, et al., 2017, p. 40) resulted in mindfulness based interventions studies. Hwang, et al.'s review of the literature suggests several health and classroom climate benefits for teachers.

Additional literature on the effect of mindfulness practices includes an empirical review of the literature conducted by Davis and Hayes (2011). This literature review was a synthesis of the benefits of mindfulness supported by research. Mindfulness, as defined by these researchers, is "a moment-to-moment awareness of one's experience without judgment" (Davis & Hayes, 2011, p. 198). *Mindful Meditation* was the focus practice, which they defined as, "A family of self-regulation practices that focus on training attention and awareness in order to bring mental processes under greater voluntary control and therapy foster mental well-being and development and/or specific capacities such as calm, clarity, and concentration" (Davis & Hayes, p. 199). The evidence-based advantages discussed in the review include: emotion regulation; decreased reactivity and increased response flexibility; increased immune functioning; improved well-being; reduced psychological distress; increased information processing speed; decreased task effort; increased ability to manage distraction and increased attentional skills; increased empathy and compassion; and decreased stress and anxiety.

Other research in the area of mindfulness has also used self-report to measure the effects of mindfulness practices. Beshai, et al. (2016) conducted a study using a sample of 89 secondary school teachers across seven schools to participate in either a mindfulness-based intervention or the control comparison group. Self-report measures, including the *Perceived Stress Scale, Warwick-Edinburgh Mental Well-Being Scale, the Neff Self-Compassion Scale,* and the *Five*

Facet Mindfulness Questionnaire were taken prior-to and following, the intervention. The intervention consisted of the 'b. Foundations Course' program created by *Mindfulness in Schools Project (MiSP)* included nine sessions each 75-minutes long and focused on mindfulness facets such as attention to body, thoughts, and self-compassion. Results showed a greater decline in stress, higher well-being scores, and an increase in mindfulness and self-compassion scores at post-intervention compared to the control group. Self-report measures, such as the PSS, present viable results and are commonly used in mindfulness research such as that of Beshai, et al.

In summary, the PSS (Cohen, et al., 1983) seemed to be the tool of choice in the studies that were reviewed on teacher stress and mindfulness practices. The various mindfulness interventions reviewed shared similar practices, which included mindful breathing and meditation, yoga, and self-compassion practice. However, interventions selected for teachers working in childcare must fit well within the context of the school day in order to be manageable. Research suggests that the implementation of mindfulness practices can produce declines in stress and reactivity, as well as improvements in well-being, sleep quality, emotion regulation, self-compassion, mindfulness, emotional functioning, self- efficacy, classroom management, and positive emotions.

Summary

Teaching is a stressful profession in which high job demands, school organization, and lack of autonomy and support all lead to high stress levels for teachers. Teacher stress has a negative impact on well-being of teachers and children, classroom climate, student outcomes, and teacher burnout. Children need warm, nurturing learning environments to develop and learn that consist of positive interactions and relationships between teachers and children. However, highly stressed teachers do not have the emotional resources to develop positive relationships

with children. Mindfulness practices can assist teachers in coping with the stressors associated with the demanding work of educating young children. Mindfulness practices can decrease teacher stress and increase emotion regulation. Implementing mindfulness practices in the classroom can also model effective coping strategies for young children to adopt. Less stressed teachers can lead to positive learning environments that create better outcomes for children and give them the social-emotional skills to benefit them in the future. While there are promising programs that exist, such as MBSR and CARE, these interventions are time consuming and costly. Therefore the present study proposes a less time intensive and more cost effective intervention to impact classroom climate and teacher stress.

CHAPTER 3. METHOD

The present study sought to determine the effects of a mindfulness practices intervention on teacher stress and classroom climate by asking two research questions: (1) Do mindfulness practices impact classroom climate? (2) Can implementing mindfulness practices decrease early childhood teacher stress? The independent variable within the present study is the intervention consisting of the mindfulness practices implemented by the teachers. The dependent variables consist of the perceived teacher stress as measured by the PSS (Cohen, et al., 1983) and observations of positive and negative climate taken from the CLASS (Pianta, et al., 2008).

Participants

The participants included three early childhood teachers working at a campus-based childcare preschool in the south. All three female subjects taught children ages five and under. Melanie was African American with 15 years experience; 13.5 years at this center. She taught three-year-old children and had an associate's degree in early childhood education, a bachelor of science in administration, and a master's degree in early childhood education. Anna was Caucasian with seven years experience; 1.5 years at this center. She taught four- and five-year-olds and had a bachelor's degree in psychology. Linda was Caucasian with 14 years experience; 8 years at this center. She taught four- and five-year-olds and had a bachelor's degree in merchandising. The subjects were chosen based on their PSS (Cohen, et al., 1983) scores. The PSS was administered to a total of eight teachers. Data from the pre-intervention measure of the PSS showed high and moderate levels of teacher stress. Stress level scores included 32, 35, and 16 for Melanie, Anna, and Linda respectively. This study had the approval from the university's Institutional Review Board and teacher consent was obtained.

Setting

The study was conducted at a preschool located on a university campus that served children from birth to Pre-K. The school followed an emergent curriculum inspired by the Reggio Emilia approach. The Reggio-inspired philosophic approach embodies the ideal that children construct their own knowledge through the help of intentional and knowledgeable adults. Projects are developed based on the children's interest and gave the children an opportunity to learn important concepts naturally by engaging in investigations and provocations.

The preschool operated as a full day program opening at 7:15 am and closing at 5:15 pm each day. Melanie and Anna worked from 7:00 am to 4:00 pm. Linda worked from 8:15 am to 5:15 pm. The teachers' schedules along with the age groups served are not conducive to interactions between the participants. They do not share breaks or lunch times and do not communicate often. The number of children varied by classroom. Melanie's classroom consisted of 12 children, six boys and six girls. Melanie was the lead teacher and had an assistant teacher's support. Anna's classroom consisted of 14 children, six boys and eight girls. Anna had two graduate assistants, one that helped in the morning and another who helped in the afternoon. Linda's classroom consisted of 15 children, seven girls and eight boys. Linda had a peer-lead teacher in her classroom.

Various learning formats were incorporated in each classroom's daily schedule. These formats included morning provocations, morning meeting, morning investigations (free choice centers), literacy time, small groups, and reflection time. Each classroom arrangement was consistent with ECERS (Harms, Clifford, & Cryer, 2014) organized into learning centers. Breakfast and lunch were served family style in the classroom. Each day the teachers were given

a 15-minute break in the morning and the afternoon, as well as a 30-minute lunch break. They also received a planning period once a week for an hour.

Perceived Stress Scale

The Perceived Stress Scale (PSS) is a self report measure of perceived stress (Cohen, 1983). The PSS consists of a 10-item questionnaire in which participants score each item on a scale from 0-4, *never* to *very often* respectively. Every item begins, "In the last month, how often have you…" For example, "In the last month, how often have you dealt successfully with irritating life hassles?" Another question asked, "In the last month, how often have you found that you could not cope with all the things that you had to do?" Scores are summarized to determine a perceived stress score. Scores range from 0 to 40. High scores range from 27 to 40; moderate stress scores range from 14-26; low stress scores range from 0-13. The reliability for the PSS was .84, .85, and .86 for each of the samples (Cohen, 1983). It is a classic stress assessment instrument commonly used in mindfulness related stress research.

Behavior Definitions

The behavior definitions used in this study were based on the positive and negative climate dimensions of the CLASS (Pianta, et al., 2007). The overall categories observed include positive relationships, positive communication, respect, positive affect, negative affect, punitive control, sarcasm/disrespect, and severe negativity. Under each of these main categories were behaviors that are indicative of each. Each main category was broken down into its respective subcategories and each subcategory was observationally defined as below.

Positive relationships included physical proximity, shared activities, peer assistance, matched affect, and social conversation. *Physical proximity* maintained that the individual is within arms reach of another person (DiCarlo, Baumgartner, Caballero, & Powers, 2016).

Shared activities was defined as taking joint participation in a common activity (Dictionary.com). *Peer assistance* was defined as giving or receiving help or support from the person of the same age (Dictionary.com). *Matched affect* was defined as displaying equal expression of emotion (Dictionary.com). For example, if the teacher was smiling when the other person was smiling, or sad when the other individual was sad, it was considered matched affect. *Social conversation* was defined as the informal interchange of thoughts with others (Dictionary.com) and was not marked during instructional conversation. It only counted if the interchange of thoughts was informal and casual.

Positive Communication included verbal affection, physical affection, and positive expectations. *Verbal affection* was scored if the vocal expression of positive emotion, feeling, or sentiment was observed (Dictionary.com). *Physical affection* consisted of the kinesthetic display of emotion, feeling, or sentiment (Dictionary.com). This included kind touches, such as a hug, placing hand on arm or back, or a high five. Additionally, the observer marked positive communication if the teacher expressed *positive expectations* in which she gave clear guidelines for behavior.

Respect included eye contact, warm, calm voice, respectful language, and cooperation and/or sharing (Cite). *Eye contact* was marked if the teacher was looking directly into another person's eyes (Dictionary.com). Speaking in a nurturing, low, even, tranquil, and cordial tone was also measured as a sign of respect (Dictionary.com). If *respectful language*—using polite and courteous verbal communication and *cooperation and/or sharing*—engaging in a shared activity for mutual benefit (Dictionary.com) were observed, the main category *respect* was marked.

Negative affect included irritability, anger, harsh voice, peer aggression, and disconnected or escalating negativity. *Irritability* was observed as being readily excited to impatience or anger (Dictionary.com). *Anger* was defined as a strong feeling of displeasure and belligerence aroused by a wrong (Dictionary.com). If the teacher was observed using an ungentle and unpleasant verbal expression it was considered a *harsh voice* (Dictionary.com). *Peer aggression* was also accounted for. Any offensive action, attack, or procedure directed towards someone of the same age (Dictionary.com) was documented as such. *Disconnected or escalating negativity* was observed if the teacher displayed antagonistic behavior that was seemingly irrational or increasing in intensity (Dictionary.com).

Punitive control included yelling, threats, physical control, and harsh punishment. *Yelling* is to cry out or speak with a strong, loud, clear sound; shout (Dictionary.com). *Threat* was a declaration of an intention or determination to inflict punishment or injury in retaliation for or conditionally upon some action or course (Dictionary.com) that a teacher used in interaction with children. *Physical control* was defined as kinesthetically exercising restraint or direction over a child (Dictionary.com). *Harsh punishment* was an ungentle or unpleasant, physically uncomfortable, cruel, or severe discipline (Dictionary.com).

Sarcasm/Disrespect includes sarcastic voice/statement, teasing, and humiliation. *Sarcastic voice/statement* was considered if a harsh or bitter verbal expression, including a sneering or cutting remark, was exhibited by the teacher (Dictionary.com). *Teasing* was to irritate or provoke with persistent petty distractions or annoyance (Dictionary.com). *Humiliation* was observed if the teacher caused a person a painful loss of pride, self-respect, or dignity; to mortify (Dictionary.com).

Severe Negativity included victimization, bullying, and physical punishment. *Victimization* referred to duping, swindling, cheating or persecuting another individual (Dictionary.com). *Bullying* was defined as exhibiting intimidating or domineering behavior (Dictionary.com). *Physical Punishment* was considered somatic discipline (Thesaurus.com).

Data Collection

Positive and negative behaviors were scored using 15-second interval recording (see Appendix B) during 10-minute observation sessions (Kazdin, 2011). Video recordings were taken for each of the 10- minute observation sessions for each participant. The observer scored the sessions using the video footage from each session by marking on the data sheet. An overall positive and negative climate score was calculated for each session, as well as each individual observed objective. The scores were calculated as a percent, which was calculated by dividing the number of occurrences by the total opportunities. Data were collected from November to February.

Observation Procedure

All sessions were recorded for 10-minutes using an iPad. The observer held the iPad and moved around to follow the teacher. The teacher was videoed from the front and within an audible distance to capture eye contact, facial expressions, tone of voice, and language. This was necessary to accurately assess the indicators measured on the data recording sheet. The observer did not interact during recordings or give any feedback during or after.

Experimental Conditions

Baseline. During baseline, teachers were not given any instruction or information other than to act as they would on any other day. Melanie exhibited negative affect. Anna exhibited irritability and Linda lacked positive affect, but was not overall negative. Although negativity

scores were not always high, no opportunity was often marked as a lack of being neither positive nor negative. Negative affect and sarcasm/disrespect were the most commonly observed negative climate behaviors during baseline. Punitive control and severe negativity were never observed from any of the subjects.

Mindfulness intervention. This study used a multifaceted mindfulness-based intervention that consisted of several practices in the literature found to be beneficial for decreasing stress. These practices included yoga poses, intentional breathing, and guided meditation (Harris, et al., 2015). The subjects were given a protocol of mindfulness practices to be used at particular times throughout the day (i.e., arrival, mid-morning, lunch, mid-afternoon, evening). The practices included in the intervention consist of guided meditation, a three-minute breathing space, and yoga. Protocol included a five-minute guided meditation video (Winston, 2014) to complete each morning before work and evening before going to sleep. In the morning with the children, the participant took part in a three-minute video of mindfulness for children (GoNoodle). During the morning 15-minute break the participant was asked to complete a three-minute breathing space video (Segal, 2016,). Yoga was also included in the protocol consisting of one to two minutes with the children each day.

Fidelity check. The teachers were given a fidelity checklist in which they were asked to indicate which mindfulness practices they used each day. The participants were asked to fill out the fidelity checklist immediately following the exercise to mark exactly what was or was not completed in each exercise. Melanie completed 86% of the intervention, consisting of 165 minutes practicing mindfulness. Anna completed 81% of the intervention, consisting of 155 minutes practicing mindfulness. Linda completed 100% of the intervention consisting of 192 minutes practicing mindfulness.

Interobserver Agreement

The reliability observer was a graduate assistant with a bachelor's degree in early childhood education. The reliability observer was trained by reviewing the operational definitions and through discussion with the researcher who answered any questions and explained examples and non-examples of the behaviors. The two observers then scored the video recordings simultaneously using the same data sheet used for all other sessions until at least 80% reliability was achieved. Interobserver reliability was calculated for 20% of all observations across baseline and intervention conditions (Kratochwill, Hitchcock, Horner, Levin, Odom, Rindskopf, & Shadish, 2010). Reliability was calculated using the point-by-point reliability formula (Kazdin, 2011). The number of agreements was divided by agreements plus disagreements and then multiplied by one hundred to obtain a percentage of reliability. For positive climate the average reliability for occurrence was 91% (range, 84-100%), non-occurrence was 86% (range, 55-100%), and overall reliability was 95% (range, 90-100%). For negative climate the average reliability for occurrence was 62%, (range, 0-100%), non-occurrence 97% (range, 87-100%), and overall reliability was 97% (range, 90-100%).

Experimental Design

A single subject research design was used to demonstrate the impact of a Mindfulness Practices Intervention on classroom climate. Specifically, a multiple baseline design across subjects was used (Kazdin, 2011). Multiple baseline designs allow for the staggered implementation of an intervention systematically across subjects only when behavior change occurs (Kazdin). Single subject research methods are useful in applied settings as it allows for comparisons of individual behavior across different conditions (baseline/mindfulness mediation) (Cooper, Heron, & Heward, 2007). This study followed the procedures for multiple baseline

designs set forth in the *Single Case Technical Document*, which stipulate that all phases have a minimum of five data points (Kratochwill, et al., 2010).

CHAPTER 4. RESULTS

The present study assessed the impact of mindfulness practices on classroom climate and early childhood educator perceived stress. Guiding research questions specifically sought to determine if 1) teachers who implement mindfulness practices daily exhibit higher positive climate and lower negative climate, and 2) the use of mindfulness practices produce a change in perceived stress scores.

Research Question 1: Classroom Climate

Research question 1 sought to determine if positive and negative classroom climate would be altered through the use of the Mindfulness Practices Intervention.

Melanie. *Positive.* During baseline Melanie's positive climate averaged 54% (range, 40-78%); when the Mindfulness Practices Intervention was applied, Melanie's positive climate averaged 75% (range, 45-85%). This represents a 21 percentage point increase in positive climate. *Negative.* During baseline, Melanie's negative climate averaged 20% (range, 8-35%); when the Mindfulness Practices Intervention was applied, Melanie's negative climate averaged 9% (3-13%). This represents an 11 percentage point decrease in negative climate.

Anna. *Positive.* During baseline, Anna's positive climate averaged 51% (range, 13-65%); when the Mindfulness Practices Intervention was applied, Anna's positive climate averaged 76% (range, 63-88%). This represents a 25 percentage point increase. *Negative.* During baseline, Anna's negative climate averaged 29% (range, 15-48%). When the Mindfulness Practices Intervention was applied, Anna's negative climate averaged 1% (range, 0-3%). This represents a 28 percentage point decrease.

Linda. *Positive.* During baseline, Linda's positive climate averaged 45% (range, 43-50%). When the Mindfulness Practices Intervention was applied, Linda's positive climate

averaged 74% (range, 55-90%). This represents a 29 percentage point increase. *Negative.* During baseline. Linda's negative climate averaged 5% (range, 0-10%). When the Mindfulness Practices Intervention was applied, Linda's negative climate averaged 0% (range, 0-0%). This represents a 5 percentage point decrease.

Research Question 2: Perceived Stress

Research question 2 sought to determine if the use of the Mindfulness Practices Intervention would decrease teacher levels of perceived stress. The PSS was administered before baseline data collection and after the intervention was completed.

Melanie. Before baseline, Melanie's perceived stress score was a 32 which is considered a high stress score. After the Mindfulness Practices Intervention was completed, Melanie's perceived stress score was a 30. This represents a 2-point decrease; remaining in the high stress bracket.

Anna. Before baseline, Anna's perceived stress score was a 35. After the Mindfulness Practices Intervention was completed, Anna's perceived stress score was a 32. This represents a 3- point decrease; remaining in the high stress bracket.

Linda. Before baseline, Linda's perceived stress score was a 16. After the Mindfulness Practices Intervention was completed, Linda's perceived stress score was a 20. This represents a 4 point increase; remaining in the moderate stress bracket.

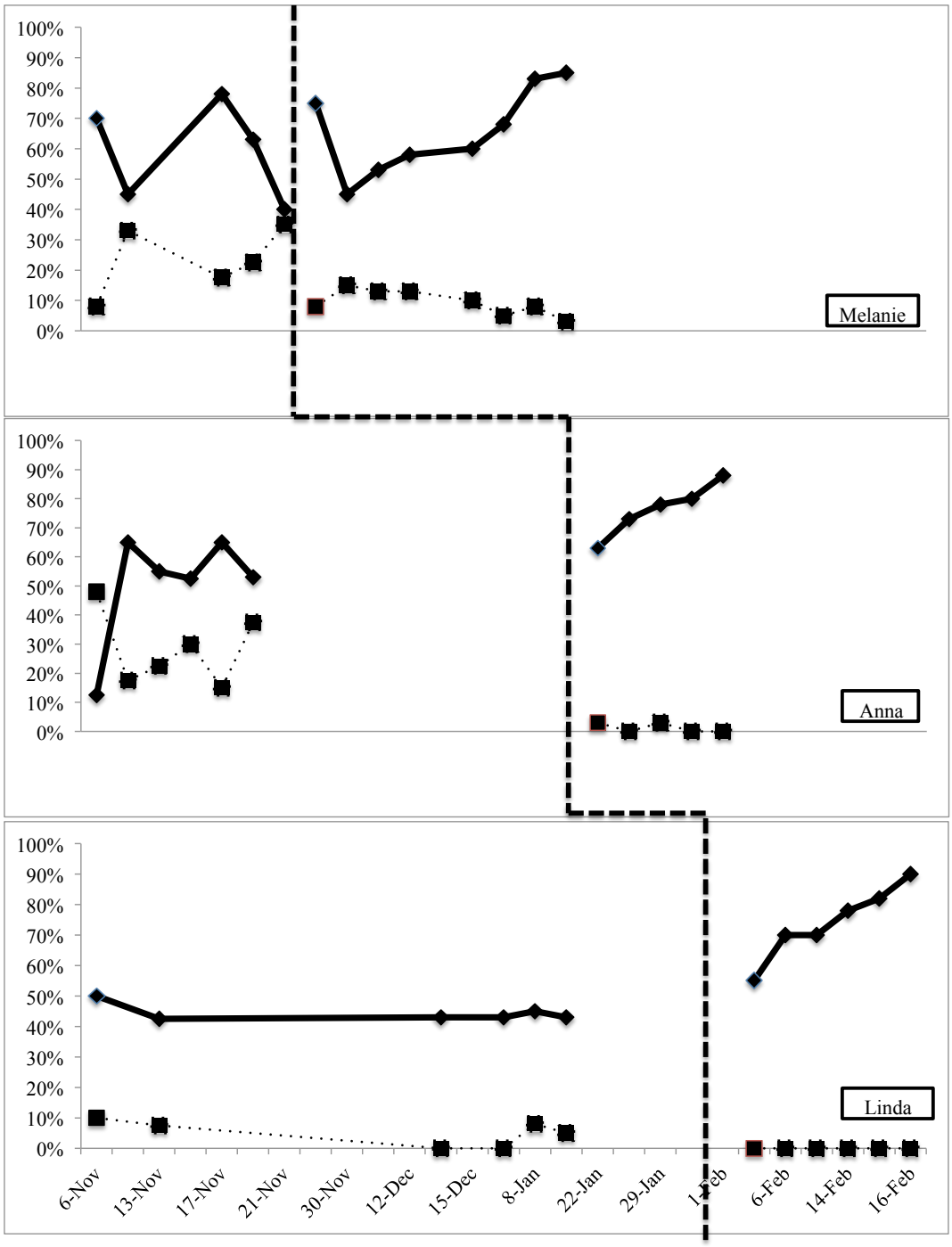

Figure 1. Results of positive and negative classroom climate for baseline and intervention. The solid line represents positive climate and the dotted line represents negative climate.

CHAPTER 5. DISCUSSION

The purpose of the present study was to determine if positive and negative classroom climate would be impacted when the Mindfulness Practices Intervention was implemented throughout the daily routine and if early childhood teachers would experience decreased levels of perceived stress. Data were collected on positive and negative classroom climate using indicators from the CLASS tool (Pianta, La Paro, & Hamre, 2008). Previous research literature summarized by Hwang, et al., (2017) maintained that mindfulness has several mental benefits for teachers including coping with stress and emotions, managing conflict, better awareness of experiences, clarity of mind, relaxation, better reaction to challenges or stressful stimuli, and feelings of reduced stress and better classroom outcomes Increased "classroom organization, emotion regulation, and use of positive affect words in the classroom" (Hwang, et al., p. 40) resulted in mindfulness based intervention studies.

Research Question 1. The results indicated that all three participants exhibited increased positive climate and decreased negative climate while implementing the Mindfulness Practices Intervention.

It is important to note that the two teachers with stress scores in the high range at baseline presented more negative climate than the teacher with moderate stress. This is consistent with findings from Jennings, et al. (2013), teacher stress is correlated with "higher levels of absenteeism, reduced quality performance, and frequent irritable mood" (p. 376). As the teachers implemented mindfulness their positive classroom climate increased and their perceived stress decreased.

Results from the present study showed that one participant's stress increased while her positive climate increased and negative climate decreased. It is possible that moderate stress does

not effect negative classroom climate, however there is no current literature to support this hypothesis. It is also possible that the PSS was not as sensitive of a tool for only a two week intervention because the tool captures the participants general stress level over the past month. This is not consistent with previous literature (Flook, et al., 2013), in which findings suggested that stress effects classroom climate and teacher efficacy. Mindfulness may be more significantly correlated to classroom climate than perceived stress. However, this should be a topic for future research.

Consistent with previous literature (Hwang, et al., 2017), the Mindfulness Practices Intervention had positive effects on classroom climate exhibited by the three teachers. Studies such as Jennings, et al. (2013) and Frank, et al. (2013) evaluated mindfulness interventions that were more time consuming. The CARE program involved four sessions over the course of four to six weeks equaling a total of 30 hours (Jennings, et al., 2013). In the MBSR intervention evaluated by Frank, et al. (2013) participants attended classes lead by a trained and experienced MBSR coach for eight weeks. Similar results were found in the current study, however the Mindfulness Practice Intervention is more cost-efficient and more manageable program. Not all schools have access to or funds to hire a mindfulness trainer/expert or time to attend group sessions. Mindfulness benefits are supported by several research studies (Hwang, et al., 2017), however it is underutilized in the field. Therefore, the Mindfulness Practices Intervention implemented in the current study was created as a feasible mindfulness intervention due to it's time and cost effective nature. Teachers can easily incorporate the Mindfulness Practices Intervention in their daily routines with and without their children.

Research Question 2. The PSS results indicted that two out of the three participants experienced decreased levels of perceived stress after the Mindfulness Practices Intervention was

completed. Various factors could have effected Linda's stress score; for example, during the intervention the teacher became aware that she may be moving to another classroom. The added potentially stressful news may have affected the results of the Mindfulness Practices Intervention. It is also possible that the participant became more aware of her stress as a result of the study and this negatively impacted her perceived stress. Reduced stress was found in other studies that implemented a mindfulness practices intervention (Beshai, et al., 2016; Davis & Hayes, 2011; Harris et al., 2015; and Taylor, et al., 2015). However, these studies incorporated more longitudinal studies and perhaps more labor-intensive interventions. Beshai, et al. administered multiple self-report measures, such as the Five Facet Mindfulness Questionnaire and the Perceived Stress Scale, and found an improvement in well-being as well as a decline in perceived stress. Perhaps incorporating multiple self-report measures, such as the Five Facet Mindfulness Questionnaire would determine if all participants acquired more mindful capabilities. It is possible that Linda did not improve her mindfulness capacities and as a result her stress was adversely effected.

The PSS was chosen because of its reliability and it's frequency of use in current mindfulness literature. However, the nature of the PSS should also be considered when reviewing the perceived stress results from the current study. The PSS asks questions about how a participant has felt within the last month. It is also possible that the PSS focuses only on negative stress and does not account for *good* stress. Due to the short duration of the study it is possible that other stress questionnaires, such as a questionnaire created specifically for teacher stress may have shown different results.

Furthermore, two teachers experienced declines in perceived stress, however they remained in the *high stress* range. More longitudinal implementation of the Mindfulness

Practices Intervention may be needed to assess whether the participants would experience declines significant enough to reduce perceived stress from the *high stress* range to the *moderate* or *low stress* range. Beshai, et al. (2015)'s intervention consisted of 9 sessions that were 75 minutes long with a trained mindfulness instructor. Perhaps interventions that incorporate group sessions or longer time spent practicing mindfulness would result in greater declines in perceived stress.

The baseline PSS scores indicated that only two teachers that were administered the questionnaire experienced high levels of perceived stress. This may be attributed to the Reggio Emilia philosophy that the center follows. Beltman, Mansfield, & Price (2011) stated, "Teacher resilience is a dynamic process or outcome that is the result of interaction over time between a person and the environment" (p. 188). Due to the nature of the Reggio Emilia inspired environment, which consists of a nature-based and calming atmosphere, it is possible that teachers in Reggio inspired schools experience less perceived stress. Future studies should consider studying the connection between the Reggio Emilia approach and teacher's perceived stress.

Limitations

With every single case design there are threats to validity. One consideration is the threat to history, a threat to internal validity. The use of a multiple baseline design minimizes this threat as the Mindfulness Practices Intervention was implemented at varying times across the three subjects. This minimizes the chance that "any event occurring at the time of the experiment could influence the results or account for the pattern of data" (Kazdin, 2011, p. 30). Another threat to internal validity controlled in this study included the internal threat of instrumentation. Due to only one observer being used throughout the extent of the study and no modifications

made to the data recording sheet, it is unlikely that the results could be threatened by instrumentation (Kazdin).

External validity was also regarded in the current study (Kazdin, 2011). The subjects that participated in the study are of varying races, working with different age groups, and have varying years of experience. These characteristic differences provide a diverse population that could benefit from the results of the Mindfulness Practices Intervention. A fidelity checklist was provided to ensure that participants implemented the intervention in the way that it was written.

Threat to generality of setting is another threat to validity that must be considered. All teachers in the present study work at the same school, however they are in all different classrooms that are designed differently, have different assistants and peer-lead teacher support, different age groups in their care and varying number of children in the classroom. This allows for some control of generality of settings even though all teachers are working at the same program. Generality across time (Kazdin) was a threat that was also controlled for. All observation sessions were conducted in the morning to account for behavior changes at different times of the day.

A viable threat to external validity in the current research is the threat of reactive assessment defined as, "The extent to which subjects are aware that their behavior is being assessed and that this awareness may influence how they respond" (Kazdin, p. 33). This threat is possible due to participants' knowledge that they are being recorded on video. Participants may exhibit behavior deemed acceptable because of their knowledge of being on camera. They may therefore, avoid unacceptable, negative climate knowing their behavior will be recorded. This threat should be taken into consideration when evaluating the observation data for this study.

Another viable limitation is the short duration of the present study. The individuals only implemented the intervention for two weeks. Many studies, such as Beshai, et al. (2017), have evaluated mindfulness interventions that are more longitudinal. Current literature suggests that it takes approximately six weeks for a behavior change to occur (Chu, Gotink, Yeh, Goldie, & Hunink, 2016). Although the time frame was sufficient for changes to teachers' positive climate practices, the duration may not have been long enough to impact teachers' perception of stress, as many questions asked teachers to think back on the past month's stressors. The slight decreases in stress are perhaps a reflection of the short duration of the study and should be taken into consideration when reviewing the perceived stress data results.

Social validity is another important aspect of substantiation assessing the need and importance of the research presented in the existing study (Kazdin, 2011). Positive and negative climate CLASS objectives are used to assess the classroom environment. This is a statewide tool used to assess classroom climate. Therefore, because the data exhibited an increase in positive climate and decrease in negative climate, it is likely to be accepted by the early childhood education society as beneficial to both the teachers and the children. Positive climate is considered to be an important component of effective learning environments for young children (CLASS; Pianta, et al., 2008).

The increase in positive climate and decrease in negative climate for all participants and a decrease in stress for a majority of the participants suggests a need to educate early childhood teachers on the effects of mindfulness practices and how to implement them in everyday life, possibly as a topic of professional development.

Clinical Implications

The positive effects of mindfulness are well documented in the literature. As teacher stress is a standing issue in the educational field and has shown to have effects on classroom climate, it stands to reason that mindfulness could have positive effects on teacher stress levels and increasing positive climate. These benefits are advantageous for both the health of teachers and the children. Positive classroom climate is associated with effective learning environments for children (CLASS; Pianta, La Paro, & Hamre, 2008). Administrators should consider how to incorporate mindfulness practices within professional development and other policies. Teachers should be instructed about the positive effects of mindfulness practices and the benefits within the classroom. They could also be taught proper mindfulness practices and techniques. Previous research claims that children of resilient teachers are more likely to attain positive outcomes than children with less resilient teacher models (Hwang, Bartlett, Greben, & Hand, 2017; Cohen, 2012).

Future Research

Since the Mindfulness Practices Intervention implemented in the present study was a package intervention consisting of yoga, guided breathing space, and guided meditation, we cannot be sure which components of the intervention are responsible for the change of behavior. Future research could study the effects of each individual practices on classroom climate and perceived stress to determine which is most useful for teachers. It may be found that some components are more effective than others, while some may be more influential within the classroom for the teachers and/or children.

The Hawthorn Effect (Cook, 1962) could pose a threat to the validity of the data in the current study. The subjects' behavior could be a result of the knowledge that they were being

videotaped and their behavior was subject to evaluation. Future research could incorporate regular video observation to offset the possible Hawthorn Effect. It may be useful for the teachers to be accustomed to being videotaped before baseline observations are conducted in the hopes that their behavior would not be affected by the presence of the camera.

Future research should consider studying the impact of mindfulness practices using longitudinal studies, which may better capture the continued use of mindfulness practices. It may have been that the short duration of the present study was not sufficient to capture a greater decline in perceived stress. The participants completed the intervention for only two weeks. Future studies should implement the Mindfulness Practices Intervention for a longer period of time to determine the effects of longer term mindfulness practices on stress..

Conclusion

In this study, the teacher's positive climate increased and negative climate decreased through the use of the Mindfulness Practices Intervention. Perceived stress scores also decreased for two out of the three teachers. The contribution of this study is a more time and cost effective Mindfulness Practices Intervention and the positive classroom climate impact that the teachers experienced as a result of incorporating the intervention into their daily routines.

REFERENCES

Beltman, S., Mansfield, C., Price, A. (2011). Thriving not just surviving: A review of research on teacher resilience. *Educational Research Review*, *6*(3), 185-207.

Beshai, S., McAlpine, L., Weare, K., & Kuyken, W. (2016). A non-randomized feasibility trial assessing the efficacy of a mindfulness-based intervention for teachers to reduce stress and improve well-being. *Mindfulness, 7*(1), 198-208.

Booth, R. (2017). Master of mindfulness, Jon Kabat-Zinn: people are losing their minds. That is what we need to wake up to. *The Guardian.* Retrieved from https://www.theguardian.com/lifeandstyle/2017/oct/22/mindfulness-jon-kabat-zinn-depression-trump-grenfell

Chu, P., Gotink, R.A., Yeh, G.Y., Goldie, S.J., & Hunink, M. (2016). The effectiveness of yoga in modifying risk factors for cardiovascular disease and metabolic syndrome: A systematic review and meta-analysis of randomized controlled trials. *European Journal of Preventive Cardiology*, *23*(3), 291-307.

Cohen, J. (2012). Creating a positive school climate: A foundation for resilience. *Handbook of Resilience in Children,* 411-423. doi:10.1007/978-1-4614-3661-4_24

Cohen, S., Kamark, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, *24*(4), 285-396. Retrieved from http://www.psy.cmu.edu/~scohen/globalmeas83.pdf

Cook, D. (1962). The Hawthorne effect in educational research. *The Phi Delta Kappan, 44*(3), 116-122. Retrieved from http://www.jstor.org.libezp.lib.lsu.edu/stable/20342865

Davis, D. M. & Hayes, J. A. (2011). What are the benefits of mindfulness? A practice review of psychotherapy-related research. *Psychotherapy, 48*(2), 198-208. doi: 10.1037/a0022062

Flook, L., Goldberg, S. B., Pinger, L., Bonus, K., & Davidson, R.J. (2013). Mindfulness for teachers: A pilot study to assess effects on stress, burnout, and teaching efficacy. *Mind, Brain, and Education*, *7(3)*, 182-195.

Frank, J. L., Reibel, D., Broderick, P., Cantrell, T., & Metz, S. (2013). The effectiveness of mindfulness-based stress reduction on educator stress and well-being: Results from a pilot study. *Mindfulness*, *6*(2), 208-216. doi: 10.1007/s12671-013-0246-2

[GoNoodle]. From mindless to mindful [Video File]. Retrieved from https://app.gonoodle.com/channels/flow/from-mindfulness-to-mindful?s=Search&t=mindless%20to%20mindful

Greenberg, M. T., Brown J. L., Abenavoli, R.M. (2016). Teacher stress and heal the effects on teachers, students, and schools. *Edna Bennett Pierce Prevention Research Center*, Pennsylvania State University. Retrieved from http://wpsudev2.vmhost.psu.edu/prc/uploads/content-images/Teacher-Brief-Final-rwjf430428.pdf

Harris, A. R., Jennings, P. A., Katz, D. A., Abenavoli, R. M., & Greenberg, M. T. (2015). Promoting stress management and wellbeing in educators: Feasibility and efficacy of a school-based yoga and mindfulness intervention. *Mindfulness,7*(1), 143-154. doi: 10.1007/s12671-015-0451-2

Haynes, D. J., Irvine, K., & Bridges, M. (2013). The blue pearl: The efficacy of teaching mindfulness practices to college students. *Buddhist-Christian Studies,33*(1), 63-82. doi: 10.1353/bcs.2013.0015

Hölzel, B. K., Lazar, S. W., Grad, T., Schuman-Olivier, Z., Vago, D. R., & Ott U. (2011). How does mindfulness meditation work? Proposing mechanisms of action from a conceptual and neural perspective. *Perspectives on Psychological Science*, *6*(6), 537–559. Retrieved from http://journals.sagepub.com/doi/abs/10.1177/1745691611419671

Hwang, Y., Bartlett, B., Greben, M., & Hand, K. (2017). A systematic review of mindfulness interventions for in-service teachers: A tool to enhance teacher wellbeing and performance. *Teaching and Teacher Education,64*, 26-42. doi: 10.1016/j.tate.2017.01.015

Jennings, P. A., Frank, J. L., Snowberg, K. E., Coccia, M. A., & Greenberg, M. T. (2013). Improving classroom learning environments by cultivating awareness and resilience in education (CARE): Results of a randomized controlled trial. *School Psychology Quarterly*. *28(4)* 374-390. doi: 10.1037/spq0000035

Kazdin, A. E. (2011). *Single-case research design: Methods for clinical and applied settings* (2nd Ed.). New York: Oxford University Press.

Kratochwill, T. R., Hitchcock, J., Horner, R. H., Levin, J. R., Odom, S. L., Rindskopf, D. M. & Shadish, W. R. (2010). Single-case designs technical documentation. Retrieved from What Works Clearinghouse website: https://ies.ed.gov/ncee/wwc/Document/229

Pianta, R. C., La Paro, K. M., & Hamre, B. K. (2008). *Classroom assessment scoring system (CLASS) manual, pre-K*. Baltimore, MD: Paul H. Brookes Pub. Co.

Roeser, R. W., Schonert-Reichl, K. A., Jha, A., Cullen, M., Wallace, L., Wilensky, R., Oberle, E., Thomson, K., Taylor, C., & Harrison, J. (2013). Mindfulness training and reductions in teacher stress and burnout: Results from two randomized, waitlist-control field trials. *Journal of Educational Psychology,105*(3), 787-804. doi: 10.1037/a0032093

Schonert-Reichl, K. (2017). Social and emotional learning and teachers. *The Future of Children, 27*(1), 137-155. Retrieved from http://www.jstor.org.libezp.lib.lsu.edu/stable/44219025

Segal, Z. [Mindful]. (2016, June 8). Three-minute breathing space [Video File]. Retrieved from https://www.youtube.com/watch?v=amX1IuYFv8A

Singh, N. N., Lancioni, G. E., Winton, A. S. W., Karazsia, B. T., & Singh, J. (2013). Mindfulness training for teachers changes the behavior of their preschool students. *Research in Human Development*, *10*(3). 211-233.

Taylor, C., Harrison, J., Haimovitz, K., Oberle, E., Thomson, K., Schonert-Reichl, K., & Roeser, R. W. (2016). Examining ways that a mindfulness-based intervention reduces stress in public school teachers: a mixed-methods study. *Mindfulness,7*(6), 1449-1449. doi: 10.1007/s12671-016-0620-y

Winston, D. [UCLA Health]. (2014, May 27). Breathing meditation: UCLA mindfulness awareness research center [Video File]. Retrieved from http://marc.ucla.edu/video-gallery

APPENDIX A. INSTITUTIONAL REVIEW BOARD APPROVAL

Application for Approval of Projects Which Use Human Subjects

This application is used for projects/studies that cannot be reviewed through the exemption process.

Institutional Review Board
Dr. Dennis Landin, Chair
130 David Boyd Hall
Baton Rouge, LA 70803
P: 225.578.8692
F: 225.578.5983
irb@lsu.edu | lsu.edu/irb

-- Applicant, Please fill out the application in its entirety and include parts B-F, listed below. Once the application is completed, please submit to the IRB Office by e-mail (irb@lsu.edu) for review and please allow ample time for the application to be reviewed. Expedited reviews usually take one month. Carefully completed applications should be submitted three weeks before a meeting to ensure a prompt decision.

-- A Complete Application Includes All of the Following:

(A) This completed form
(B) A brief project description (adequate to evaluate risks to subjects and to explain your responses to Parts 1&2)
(C) Copies of all instruments to be used.
*If this proposal is part of a grant proposal, include a copy of the proposal and all recruitment material.
(D) The consent form that you will use in the study (see part 3 for more information.)
(E) Certificate of Completion of Human Subjects Protection Training for all personnel involved in the project, including students who are involved with testing or handling data, unless already on file with the IRB. Training link: (http://phrp.nihtraining.com/users/login.php)
(F) Signed copy of the IRB Security of Data Agreement: (https://sites01.lsu.edu/wp/ored/files/2013/07/IRB-Security-of-Data.pdf)

1) Principal Investigator*: Cynthia F. Dicarlo **Rank:** Professor

*PI **must be** an LSU Faculty Member

Dept: School of Education **Ph:** 578-7005 **E-mail:** cdicar2@lsu.edu

2) Co Investigator(s): please include department, rank, phone and e-mail for each

Erin Hebert, Graduate Student, 337-380-2679, ehebe29@lsu.edu

3) Project Title: The Impact of Mindfulness Practices on Early Childhood Educator Stress

4) Proposed Start Date: October 15, 2016 **5) Proposed Duration Months:** 2

6) Number of Subjects Requested: 5 **7) LSU Proposal #:**

8) Funding Sought From:

ASSURANCE OF PRINCIPAL INVESTIGATOR named above

I accept personal responsibility for the conduct of this study (including ensuring compliance of co-investigators/co-workers) in accordance with the documents submitted herewith and the following guidelines for human subject protection: The Belmont Report, LSU's Assurance (FWA00003892) with OHRP and 45 CFR 46 (available from http://www.lsu.edu/irb). I also understand that copies of all consent forms **must be maintained at LSU for three years after the completion of the project**. If I leave LSU before that time, the consent forms should be preserved in the Departmental Office.

Signature of PI _____ Date 9-25-17

ASSURANCE OF STUDENT/PROJECT COORDINATOR named above. If multiple Co-Investigators, please create a "signature page" for all Co-Investigators to sign. Attach the "signature page" to the application.

I agree to adhere to the terms of this document and am familiar with the documents referenced above.

Signature of Co-PI (s) Erin Hebert Date 9-25-17

Continue on the next page

Part 4: Consent Form (Including Assent Form and Parental Permission Form if minors are involved)

 Please note: The consent form must be written in non-technical language which can be understood by the subjects. It should be free of any exculpatory language through which the participant is made to waive, or appears to be made to waive any legal rights, including

 For example consent forms and a complete checklist of required items, please refer to our website, www.lsu.edu/irb. Remember, **IRB contact information must be included** on the consent form!

 To waive signed consent. **IRB must be provided with the consent script** that will present the informed consent information to human subjects regarding the study/research. Also, note that waiving signed consent requires full IRB approval, which may delay approval of your study.

I am requesting waiver of signed Informed Consent because:

☐ (a) Having a participant sign the consent form would create the ***principal risk*** of participating in the study.

or that

☐ (b) The research presents ***no more than minimal risk*** of harm to subjects and involves no procedures for which having signed consent is normally required.

Expedited reviews usually take one month. See our website for information about meeting dates. Carefully completed applications should be submitted three weeks before a meeting to ensure a prompt decision.

Institutional Review Board
Dr. Dennis Landin, Chair
130 David Boyd Hall
Baton Rouge, LA 70803
P: 225.578.8692
F: 225.578.5983
irb@lsu.edu | lsu.edu/irb

ACTION ON PROTOCOL APPROVAL REQUEST

Institutional Review Board
Dr. Dennis Landin, Chair
130 David Boyd Hall
Baton Rouge, LA 70803
P: 225.578.8692
F: 225.578.5983
irb@lsu.edu
lsu.edu/research

TO: Cynthia DiCarlo
Education

FROM: Dennis Landin
Chair, Institutional Review Board

DATE: October 9, 2017

RE: **IRB#** 3936

TITLE: The Impact of Mindfulness Practices on Early Childhood Educator Stress

New Protocol/Modification/Continuation: New Protocol

Review type: Full ____ Expedited _X_ **Review date:** 10/5/2017

Risk Factor: Minimal ___X___ Uncertain _____ Greater Than Minimal_____

Approved_____X_____ **Disapproved**_____

Approval Date: 10/5/2017 **Approval Expiration Date:** 10/4/2018

Re-review frequency: (annual unless otherwise stated)

Number of subjects approved: 5

LSU Proposal Number (if applicable)**:**

Protocol Matches Scope of Work in Grant proposal: (if applicable)

By: Dennis Landin, Chairman _____

PRINCIPAL INVESTIGATOR: PLEASE READ THE FOLLOWING –
Continuing approval is CONDITIONAL on:

1. Adherence to the approved protocol, familiarity with, and adherence to the ethical standards of the Belmont Report, and LSU's Assurance of Compliance with DHHS regulations for the protection of human subjects*
2. Prior approval of a change in protocol, including revision of the consent documents or an increase in the number of subjects over that approved.
3. Obtaining renewed approval (or submittal of a termination report), prior to the approval expiration date, upon request by the IRB office (irrespective of when the project actually begins); notification of project termination.
4. Retention of documentation of informed consent and study records for at least 3 years after the study ends.
5. Continuing attention to the physical and psychological well-being and informed consent of the individual participants, including notification of new information that might affect consent.
6. A prompt report to the IRB of any adverse event affecting a participant potentially arising from the study.
7. Notification of the IRB of a serious compliance failure.
8. **SPECIAL NOTE: When emailing more than one recipient, make sure you use bcc.**

**All investigators and support staff have access to copies of the Belmont Report, LSU's Assurance with DHHS, DHHS (45 CFR 46) and FDA regulations governing use of human subjects, and other relevant documents in print in this office or on our World Wide Web site at http://www.lsu.edu/irb*

APPENDIX B . DATA SHEET

Teacher:_____ Date: _____
Observer: _____

Minute	:00					:15					:30					:45				
	(+)		(-)			(+)		(-)			(+)		(-)			(+)		(-)		
	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO
	POC	RES	S/D	SN		POC	RES	S/D	SN		POC	RES	S/D	SN		POC	RES	S/D	SN	
1:00	(+)		(-)			(+)		(-)			(+)		(-)			(+)		(-)		
	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO
	POC	RES	S/D	SN		POC	RES	S/D	SN		POC	RES	S/D	SN		POC	RES	S/D	SN	
2:00	(+)		(-)			(+)		(-)			(+)		(-)			(+)		(-)		
	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO
	POC	RES	S/D	SN		POC	RES	S/D	SN		POC	RES	S/D	SN		POC	RES	S/D	SN	
3:00	(+)		(-)			(+)		(-)			(+)		(-)			(+)		(-)		
	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO
	POC	RES	S/D	SN		POC	RES	S/D	SN		POC	RES	S/D	SN		POC	RES	S/D	SN	
4:00	(+)		(-)			(+)		(-)			(+)		(-)			(+)		(-)		
	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO
	POC	RES	S/D	SN		POC	RES	S/D	SN		POC	RES	S/D	SN		POC	RES	S/D	SN	
5:00	(+)		(-)			(+)		(-)			(+)		(-)			(+)		(-)		
	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO
	POC	RES	S/D	SN		POC	RES	S/D	SN		POC	RES	S/D	SN		POC	RES	S/D	SN	
6:00	(+)		(-)			(+)		(-)			(+)		(-)			(+)		(-)		
	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO
	POC	RES	S/D	SN		POC	RES	S/D	SN		POC	RES	S/D	SN		POC	RES	S/D	SN	
7:00	(+)		(-)			(+)		(-)			(+)		(-)			(+)		(-)		
	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO
	POC	RES	S/D	SN		POC	RES	S/D	SN		POC	RES	S/D	SN		POC	RES	S/D	SN	
8:00	(+)		(-)			(+)		(-)			(+)		(-)			(+)		(-)		
	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO
	POC	RES	S/D	SN		POC	RES	S/D	SN		POC	RES	S/D	SN		POC	RES	S/D	SN	
9:00	(+)		(-)			(+)		(-)			(+)		(-)			(+)		(-)		
	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO	REL	PA	NA	PC	NO
	POC	RES	S/D	SN		POC	RES	S/D	SN		POC	RES	S/D	SN		POC	RES	S/D	SN	

VITA

Erin K. Hebert, a native of New Iberia, Louisiana, received her bachelor's degree in Curriculum and Instruction with PK-3 Teacher Certification at Louisiana State University, 2012. She served as a graduate assistant teaching young children at the LSU Early Childhood Education Laboratory Preschool while conducting her graduate studies. She will be returning to New Iberia to continue her teaching journey.